

In the Claims:

1. (Currently amended.) A horizontal atmospheric furnace, in particular for the thermal treatment of metallic workpieces (11) at high temperatures, comprising a preferably cylindrical furnace chamber (2) and a furnace door (12) ~~that closes~~ for closing the furnace chamber (2) in a gas-tight manner, wherein the furnace door (12) is mounted in a displaceable manner within a door case (13) that forms a lock ~~which can~~ capable of being closed ~~be closed~~ in a gas-tight manner.

2. (Currently amended.) A The horizontal atmospheric furnace according to claim 1, ~~characterized in that~~ wherein the door case (13) comprises ~~means for~~ a gas-tight connection to a correspondingly formed counter-module.

3. (Currently amended.) A The horizontal atmospheric furnace according to ~~one of the claims 1 or 2, characterized in that~~ claim 1, wherein the furnace door (12) ~~can be~~ preferably is displaced vertically with respect to the longitudinal direction (20) of the furnace chamber (2).

4. (Currently amended.) A The horizontal atmospheric furnace according to ~~one of the preceding claims 1 through 3, characterized in that a~~ claim 1, wherein the thermal treatment ~~can be carried out~~ is conducted at ~~temperatures comprised a temperature~~ between from about 400°C and to about 1050°C.

5. (Currently amended.) A The horizontal atmospheric furnace according to ~~one of the preceding claims, characterized in that~~ claim 1, wherein the door case (13) comprises a gas discharge ~~means~~ (23) port.

6. (Currently amended.) A The horizontal atmospheric furnace according to ~~one of the preceding claims, characterized in that~~ claim 1, wherein the furnace chamber (2) comprises gas inlets (14, 15) formed in the furnace chamber wall ~~and/or a burning-off means~~ (16).

7. (Currently amended.) A The horizontal atmospheric furnace ~~characterized by~~ according to claim 1, further comprising a gas circulation device (9) ventilator placed inside said the furnace chamber (9).

8. (Currently amended.) A The horizontal atmospheric furnace according to ~~one of the preceding claims, characterized by~~ claim 1, further comprising several bar-shaped a multitude of heating elements (8) that extend in the longitudinal direction (20) of said furnace chamber (2) and ~~are arranged in the way of a drum turret~~ form a treatment zone.

9. (Currently amended.) A The horizontal atmospheric furnace according to ~~one of the preceding claims, characterized in that~~ to claim 1, wherein the gas circulation device (9) is a ventilator is driven by a motor, wherein the drive unit (10) of the ventilator is placed outside said furnace chamber (2), ~~such that is accessible from outside~~.

10. (Currently amended.) A The horizontal atmospheric furnace according to ~~one of the preceding claims, characterized in that a~~ claim 1, further comprising a transport arranged inside the furnace chamber for receiving ~~workpieces (11) the workpiece to be~~ thermally treated, ~~which can~~ wherein the transport is capable of being be displaced on rails (6) in the longitudinal direction (20) of said furnace chamber (2), ~~is arranged inside said furnace chamber (2)~~.

11. (Currently amended.) A method for the thermal treatment of ~~in particular a~~ a metallic ~~workpieces~~ workpiece in a horizontal atmospheric furnace, ~~in which furnace, wherein the workpieces~~ workpiece to be thermally treated ~~are~~ is supplied to the atmospheric ~~box~~ furnace by ~~means of a transport chamber that~~ which is arranged in a relatively displaceable manner with respect to the atmospheric box furnace, ~~wherein~~ wherein:

(A) ~~in a first step, coupling the transport chamber~~ chamber, which that is ~~eventually ultimately~~ filled with protective gas ~~is coupled gas~~, in a gas-tight manner to the door case of the atmospheric ~~box~~ furnace,

- (B) ~~in a second step, sweeping the volume space encapsulated by the door case as well as, if necessary, and, optionally, the transport chamber are swept with a~~ protective gas,

- (C) ~~in a third step, transferring the workpieces~~ workpiece desired to be thermally treated ~~are transferred~~ from the transport chamber into the atmospheric box furnace in protective gas atmosphere and
- (D) ~~finally in a fourth step, thermally treating the workpieces that have been the~~ workpiece transferred into the atmospheric box furnace ~~are thermally treated~~ in protective gas.

12. (Currently amended.) A The method according to claim 11, ~~characterized in that after completion of a thermal treatment wherein, subsequent to step (D), the workpieces~~ are workpiece is supplied to a quenching chamber by ~~means of~~ the transport chamber, wherein

(E) ~~in a first step, the thermally treated workpieces are~~ is transferred in protective gas from the atmospheric box furnace into the transport ~~chamber that has~~ chamber, the transport chamber having been coupled in a gas-tight manner to the atmospheric box furnace,

(F) ~~in a second step, closing~~ the transport chamber and the atmospheric box furnace ~~are closed~~ in a gas-tight manner,

(G) ~~in a third step, sweeping~~ the volume space formed by the door case, ~~is swept~~ case with nitrogen gas,

(H) ~~in a fourth step, decoupling~~ the transport chamber ~~is decoupled~~ from the atmospheric box furnace,

(I) ~~in a fifth step, displacing~~ the transport chamber ~~is displaced~~ towards the quenching chamber and ~~coupled~~ coupling the transport chamber in a gas-tight manner to the quenching chamber,

(J) ~~in a sixth step, sweeping~~ the air ~~is swept~~ out of the volume space formed by the door case between transport chamber and quenching chamber with nitrogen gas,

(K) ~~in a seventh step, transferring the workpieces~~ workpiece ~~are transferred~~ in protective gas from the transport chamber into the quenching chamber after opening the doors of both chambers and

(L) ~~finally in an eighth step, quenching the workpieces~~ workpiece ~~that have been transferred into the quenching chamber are quenched~~ after closing the doors of the two chambers.

13. (Currently amended.) A The method according to claim 12, ~~characterized in~~

that wherein the atmospheric box furnace is swept with protective gas before a transfer of the ~~workpieces~~ workpiece into the transport chamber.

14. (Currently amended.) A The method according to claim 12, ~~characterized in~~
that wherein the transport chamber is swept with protective gas after a transfer of the
~~workpieces~~ workpiece into the transport chamber.

15. (New.) The horizontal atmospheric furnace according to claim 6,
wherein the furnace chamber further comprises a combustion means.